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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/854,123	05/11/2001	Junichi Takeuchi	14617	7415

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EXAMINER	
SCHEIBEL, ROBERT C	

ART UNIT	PAPER NUMBER
2666	

DATE MAILED: 11/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/854,123	TAKEUCHI ET AL.	
	Examiner	Art Unit	
	Robert C. Scheibel	2666	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 May 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: the acronym LSI is not defined prior to its use (see paragraph 3 on page 1, for example).

Appropriate correction is required.

Drawings

2. The drawings are objected to because the header signal and transmission rate information of Figure 2 are not labeled as "A" and "C" as they are referred to in the second full paragraph of page 7. This objection can be overcome by labeling these elements (as they are in Figure 3). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims **1, 8, and 15** are rejected under 35 U.S.C. 102(a) as being anticipated by IEEE Standard 1394a-2000 (hereinafter "IEEE 1394a"). Note that this document amends the previous version of the document and some of the limitations are taught in the original version (IEEE Standard 1394-1995); however, the combined contents of both physical documents are considered to be a part of the same single document referred to throughout as "IEEE 1394a".

Regarding claim **1, 8, and 15** AAPA discloses the limitations of claim 1 as follows: a method of establishing data communication between two subsystems via a communication cable in a communication system, the data communication being established after a predetermined connection procedure between the subsystems via the communication cable, comprising the steps of: connecting two subsystems with each other via the communication cable (see the first paragraph of section 3.9.1; when the first two devices are added to the connection topology, a change in connection status similar to that described in this section will occur; see also section 3.9.5.1); recognizing physical connection between the two subsystems by the two subsystems (see the first paragraph of section 3.9.1; the connection must be recognized for a change in connection status to occur; see also section 3.9.5.1); ignoring signals from one of the two subsystems by the other for a predetermined time period from the recognizing step (see section 3.9.1, the paragraph starting with "The problem of connection scrape..."; the connection time-

out discloses this step of ignoring as the connection will not be started until the end of the timeout period and thus any signals received during this time period are ignored); executing the connection procedure by the two subsystems (the "bus initialization and configuration process" discussed in section 3.9.1); and establishing data communication between the two subsystems (understood throughout as the main objective of the standard – see section 1.1 for example). Similarly, regarding claims **8 and 15**, IEEE 1394a discloses the physical layer interface and protection circuit as described above.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims **1-5, 8-12, and 15-19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of U.S. Patent 5,953,346 to Luddy.

Regarding claim **1, 8, and 15** AAPA discloses the limitations of claim 1 as follows: a method of establishing data communication between two subsystems via a communication cable in a communication system, the data communication being established after a predetermined connection procedure between the subsystems via the communication cable, comprising the steps of: connecting two subsystems with each other via the communication cable (see the first sentence of the third paragraph of page 1); recognizing physical connection between the two subsystems by the two subsystems (see the first sentence of the second full paragraph of page 2; the two subsystems must recognize physical connection if they are able to perform the connection procedure immediately after the cable is connected); executing the connection procedure by the two subsystems (see the second paragraph on page 1); and establishing data communication between the two subsystems (see the first sentence of paragraph 1 of page 1 which describe that communication is established between these two subsystems). Similarly, regarding claims **8 and 15**, AAPA discloses the physical layer interface as described above.

AAPA does not disclose expressly the limitation of claim 1 of ignoring signals from one of the two subsystems by the other for a predetermined time period from the recognizing step. AAPA also does not disclose the limitation of claims 8 and 15 of the protection circuit for ignoring signals.

Luddy discloses the limitation of ignoring signals from one of the two subsystems by the other for a predetermined time period from the recognizing step in lines 3-8 of column 2. The suppression of the confirmation tone is the ignoring step and discloses the function of the protection circuit. AAPA and Luddy are analogous art because they are from the same field of endeavor of communications systems which require rate arbitration. At the time of the invention

it would have been obvious to a person of ordinary skill in the art to modify the AAPA to add the step of suppressing acknowledgements in the arbitration process, thereby ignoring the originally transmitted signal corresponding to the acknowledgement. The motivation for doing so would have been to allow the system to reliably transport encoded data when precise synchronization does not exist as suggested by Luddy in lines 8-10 of column 2. Therefore, it would have been obvious to combine Luddy with AAPA for the benefit of providing reliable communication in the absence of precise synchronization to obtain the invention as specified in claims 1, 8, and 15.

Regarding claims **2, 9, and 16**, AAPA discloses the limitation that each one of the two subsystems sends constant signals to the other subsystem at the ignoring step in the first sentence of paragraph 2 of page 1. This sentence indicates that the predetermined connection procedure is executed when the cable is connected which is prior to the ignoring step, thus disclosing that the constant signals (connection procedure) are sent during the ignoring step.

Regarding claims **3, 10, and 17**, the limitation that the connection procedure comprises arbitration of transmission rate is disclosed in the second sentence of paragraph 2 of page 1.

Regarding claims **4, 11, and 18**, the limitations that the arbitration comprises the steps of: informing one of the subsystems of the other subsystem's transmission rate and lowering higher transmission rate to lower transmission rate so as to be correspondent transmission rates of the two subsystems with each other are disclosed by AAPA in the first full paragraph of page 2.

Regarding claims **5, 12, and 19**, the limitation that the arbitration further comprises the step of sending an acknowledgement signal from one of the subsystems to the other when the subsystem recognizes the correspondence of the transmission rate is inherent in the AAPA as described in the first full paragraph of page 2 for example. In order for the two subsystems to

agree on a rate, each side must be aware of the selected rate. This requires a handshaking scheme between the two subsystems and, at a minimum, requires one subsystem to select a rate from an advertised capability (of the other subsystem) and acknowledge the advertised capability with this selection to the other subsystem.

8. Claims **6-7, 13-14, and 20-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of U.S. Patent 5,953,346 to Luddy as applied to claims 1, 8, and 15 above, and further in view of "NEC looks to lead long-haul 1394 standards efforts" from EE Times by Hara (hereinafter "Hara").

AAPA and Luddy disclose all the limitations of parent claims 1, 8, and 15 as described above. However, AAPA and Luddy do not disclose expressly the limitations of claims 6-7, 13-14, and 20-21. Hara discloses the limitations of claims 6, 13, and 20 that the communication system is an optical communication system in the sixth paragraph (starting with "The chip has three operating modes..."). This paragraph discloses that the chip described in the article supports connection with plastic optical fiber cables; using this chip with plastic optical fiber discloses the limitation that the system is an optical communications system. Similarly, Hara discloses the limitations of claims 7, 14, and 21 in the sixth paragraph as described above. AAPA, as modified by Luddy, and Hara are analogous art because they are from the same field of endeavor of high-speed serial communications (the IEEE 1394 standard is very similar to the generic system described in the background section of the present invention.) At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify AAPA to use a plastic optical fiber cable to allow the use of longer transmission distances and thus enable it's use in long-haul applications. The motivation for doing so would have been to enable the use

of longer transmission distances as suggested by Hara in the third and eighth paragraphs. Therefore, it would have been obvious to combine Hara with AAPA, as modified, for the benefit of longer transmission distances to obtain the invention as specified in claims 6-7, 13-14, and 20-21.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 6,266,344 to Fujimori et al and U.S. Patent Application Publication 2003/0179719 to Kobayashi et al both disclose means of negotiating among different data rates.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert C. Scheibel whose telephone number is 571-272-3169. The examiner can normally be reached on Monday and Thursday from 6:30-5:00 Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RCS 11-4-04

Robert C. Scheibel
Examiner
Art Unit 2666